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P. 001/014

**PATENT**  
Atty Docket No.: 10006288-1

**In The U.S. Patent and Trademark Office**

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**In Re the Application of:**

**JUL 17 2006**

**Inventor(s):** Qian Lin

**Confirmation No.:** 5006

**Serial No.:** 10/074,179

**Examiner:** Aung Soe Moe

**Filed:** February 12, 2002

**Group Art Unit:** 2685

**Title:** METHOD AND SYSTEM FOR ASSESSING THE PHOTO QUALITY OF  
A CAPTURED IMAGE IN A DIGITAL STILL CAMERA

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Commissioner for Patents

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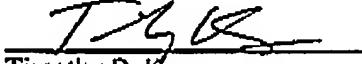
1 sheet of Transmittal Letter for Reply Brief.

11 sheets of Reply Brief.

Respectfully submitted,

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July 17, 2006

  
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PATENT APPLICATION  
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IN THE  
UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor(s): Qian Lin

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Filing Date: Feb. 12, 2002

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Title: METHOD AND SYSTEM FOR ASSESSING THE PHOTO QUALITY OF A CAPTURED IMAGE IN A DIGITAL STILL CAMERA

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Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

TRANSMITTAL OF REPLY BRIEF

Sir:

Transmitted herewith is the Reply Brief with respect to the Examiner's Answer mailed on 5/17/06. This Reply Brief is being filed pursuant to 37 CFR 41.41 within two months of the date of the Examiner's Answer.

(Note: Extensions of time are not allowed under 37 CFR 1.138(a))

(Note: Failure to file a Reply Brief will result in dismissal of the Appeal as to the claims made subject to an expressly stated new grounds of rejection.)

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Inventor(s): Qian Lin

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A CAPTURED IMAGE IN A DIGITAL STILL CAMERA

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REPLY BRIEF

The Appellant respectfully submits this Reply Brief in response to the Examiner's Answer mailed on May 17, 2006.

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**I. STATUS OF CLAIMS**

Claims 1, 2, 20, and 25 have been canceled without prejudice or disclaimer of the subject matter contained therein.

Claims 3-13, 21-24, and 26 have been allowed.

Claims 14-19 and 27 stand rejected.

Pursuant to 37 C.F.R. § 41.37, the Appellant hereby appeals the Examiner's decision finally rejecting Claims 14-19 and 27 to the Board of Patent Appeals and Interferences. Therefore, Claims 14-19 and 27 of this application are at issue on this appeal.

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**II. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

Whether Claim 14 is unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,298,198 to Ina et al. in view of U.S. Patent No. 6,134,339 to Luo.

Whether Claims 15-18 and 27 are unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,298,198 to Ina et al. in view of U.S. Patent No. 6,134,339 to Luo and further in view of U.S. Patent Application Publication No. 2002/0191861 to Cheuttle.

Whether Claim 19 is unpatentable under 35 U.S.C. § 103(a) over U.S. Patent No. 6,298,198 to Ina et al. in view of U.S. Patent No. 6,134,339 to Luo and further in view of U.S. Patent No. 6,016,354 to Lin et al.

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III. ARGUMENTA. Rejection of Claim 14 Under 35 U.S.C. §103(a) Over U.S. Patent No. 6,298,198 to Ina et al. in view of U.S. Patent No. 6,134,339 to Luo

1. Ina et al. fails to disclose that the photo quality of a captured image is checked in-camera as claimed in Claim 14 of the present invention

On page 3, paragraph 1, of the Examiner's Answer, the Examiner incorrectly asserts that Ina et al. discloses "checking, in camera, the photo quality of the captured image to determine[sic] if the photo quality is acceptable". This is an incorrect assertion because Ina et al. at least fails to disclose that the photo quality of a captured image is checked in-camera. Instead, Ina et al. discloses that a first image captured during a first time interval and a second image captured during a second time interval, are digitally combined to provide a resultant image that is shown on the image display 40, so that a user may determine whether the resultant image is blurred. (Ina et al., col. 1, lines 46-50 and col. 3, lines 18-23).

Clearly, therefore, Ina et al. fails to disclose or suggest that the resultant image is processed, in-camera, to determine whether the image is acceptable. Rather, Ina et al. merely discloses that two images are combined to enable a user to determine whether there was relative movement when the two images were captured, which may have resulted in a blurred image captured on an imaging media. The Examiner appears to appreciate that Ina et al. is directed to enabling users to make this determination as indicated on page 4 of the Examiner's Answer. In the first full paragraph, more particularly, the Examiner states that "the feedback image is display[sic] on the LCD 40 of the camera so as the quality of the image can be determined by the user during the image capturing process". In the second

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paragraph, the Examiner further states that Ina et al. suggests that "the quality of the digital image can be analyzed to determine a blurred image (i.e., see col. 7, lines 45+) so that the quality of the captured image (i.e., the Face of the image as shown in Fig. 14) may be determined by the user (i.e., col. 7, lines 45+, col. 8, lines 5+)".

It thus appears that the Examiner has interpreted "in-camera" to include both processes that occur in the camera 10 as well as processes performed by a user. This interpretation is improper because "in-camera" clearly denotes that checking of the image photo quality is performed by components contained in the camera. In making this interpretation, the Examiner has also improperly discounted the meaning of "in-camera" described, for instance, on page 8, paragraph 28 of the *Specification*. See, e.g., *In re Marosi*, 710 F.2d 799, 218 USPQ 289 (Fed. Cir. 1983) ("Claims are not to be read in a vacuum, and limitations therein are to be interpreted in light of the specification in giving them their broadest reasonable interpretation.") 710 F.2d at 802, 218 USPQ at 292 (quoting *In re Okuzawa*, 537 F.2d 545, 548, 190 USPQ 464, 466 (CCPA 1976)) (emphasis in original)).

For at least the foregoing reasons, it is respectfully submitted that Ina et al. fails to disclose that the photo quality of a captured image is checked, in-camera, to determine if the photo quality is acceptable, as recited in Claim 14 of the present invention.

**2. Ina et al. fails to disclose that a face quality figure of merit is computed for a captured image as claimed in Claim 14 of the present invention**

The Examiner improperly asserts that Ina et al. discloses that a "face quality figure of merit" is computed. (Examiner's Answer, page 4, first paragraph). In setting forth this

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assertion, the Examiner argues that the processor 92 calculates "the electronic exposure time for the first and second initial images 128/130 to be combined by the processor 92 to determine[sic] the face quality figure of merit to determine whether the captured image is acceptable (see col. 7, lines 40+ and col. 8, lines[sic])." (Examiner's Answer, page 11, second full paragraph). In the second full paragraph of page 11, the Examiner also states that the "face quality figure of merit" is "the blur image 134 shown in Figs.[sic] 14...".

The Examiner further states in that paragraph that "the processor 92 and the controller 100 are used in the camera 10 to compute a face quality figure of merit for the captured image by calculating the exposure time intervals and further processing/combining the first/second images as shown in Figs. 7-10 (i.e., see col. 10, lines 2+)." Based upon these assertions, it is evident that the Examiner has misunderstood the disclosure contained in Ina et al.

As discussed in column 8, lines 40-49, of Ina et al., an image shutter 88 is opened for a first time during the initial portion 140 of an image exposure time interval 139 and opened for a second time during the final portion 144 of the image exposure time interval 139. As such, Ina et al. determines the exposure time interval 139 to ensure that the image shutter 88 is opened at the initial portion 140 and the final portion 144 of the exposure time interval 139. It should also be pointed out that the length of the exposure time interval 139 has no bearing on the blurriness of the resultant image 134. Rather, the processor 92 uses the exposure time interval 139 to set the first time and the second time at which the two images 128, 130 are captured. In fact, the shutter 88 may be opened for relatively long periods of time without the resultant image 134 being blurred. Clearly, therefore, the Examiner erred in asserting that

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calculation of the exposure time is somehow equivalent to computing a face quality figure of merit.

In addition, Ina et al. never states that the camera 10 is capable of computing the degree to which the resultant image 134 is blurred. Instead, Ina et al. merely states that the resultant image 134 is displayed to a user such that the user can make that determination. Thus, even assuming for the sake of argument that the blurred resultant image 134 could somehow be construed as reading on the claimed "face quality figure of merit", the camera 10 of Ina et al. would be unable to inform a user as to whether the resultant image 134 is blurred. As such, the camera 10 of Ina et al. would be incapable of informing a user as to the blurriness of the resultant image 134.

For at least the foregoing reasons, it is respectfully submitted that Ina et al. fails to disclose that a face quality figure of merit is computed, in-camera, for a captured image, as claimed in Claim 14 of the present invention.

3. Ina et al. fails to disclose that a computed face quality figure of merit is compared to a threshold, in-camera, to determine if the face quality figure of merit exceeds the threshold as claimed in Claim 14 of the present invention

As discussed above, the Examiner misconstrued the blurred resultant image 134 of Ina et al. as reading on the claimed "face quality figure of merit." More particularly, for instance, Ina et al. fails to disclose that the processor 92 computes any type of measure in the amount of blurriness existent in the blurred resultant image 134. Instead, Ina et al. merely displays the resultant image 134 to a user such that the user may manually make a determination as to whether an image captured on film is blurred.

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As such, it is clearly evident that Ina et al. fails to disclose or suggest that a computed face quality figure of merit is compared to a threshold, in-camera, to determine if the face quality figure of merit exceeds the threshold as claimed in Claim 14 of the present invention.

**4. Luo does not make up for the deficiencies in Ina et al. and the proposed combination therefore fails to disclose all of the features of Claim 14 of the present invention**

The Examiner asserts that "computing, in a camera, a face quality figure of merit for the captured image by comparing the computed face quality figure of merit to a threshold to determine if the face quality figure of merit exceeds the threshold is well known in the art as taught by Luo". (Examiner's Answer, page 4, paragraph 3). In support of this argument, the Examiner asserts that "the peak values of the eyes, as shown in Figs.[sic] 8, the step 45 is used to compare with a predetermined threshold data at step 46) to determine[sic] if the face quality figure of merit (i.e., peak value of the eyes image data) exceeds the threshold (i.e., at steps 46 of Fig. 8, Luo '339 clearly teaches the comparing steps determine if the computed "peak value" of the eyes exceed/above a pre-defined threshold value; see col. 11, lines 5-10)" (Examiner's Answer, page 12, second full paragraph).

Initially, it should be understood that the "peak value" discussed in Luo pertains to the locations of the eyes detected in an image through detection of either the centers of the pupils or the centers of the eyes. (Luo, column 11, lines 5-14). In addition, therefore, steps 45 and 46 in Figure 8 pertain to a determination of whether the locations of the eyes were accurately detected. Thus, for instance, if the "peak value" falls below a pre-defined threshold, an error code is output S49, which means that the eyes in an image were not sufficiently accurately

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detected. As such, the Examiner's assertion that the "peak value" somehow corresponds to a "face quality figure of merit" is clearly incorrect.

In addition, Luo is not concerned with whether the quality of an image is acceptable, but instead, discloses an apparatus 10 for determining the positions of eyes through the "red-eye" phenomenon. (Column 7, lines 13-22). More particularly, the positions of the eyes are determined by capturing an image at ambient light and capturing an image with light from an illumination source 12. (Column 7, lines 28-32). The captured images are compensated for the illumination changes and the compensated image is subtracted from an uncompensated frame to obtain a color compensated difference image. (Column 7, lines 32-37).

Clearly, therefore, Luo fails to disclose or suggest that a face quality figure of merit for a captured image is computed as part of a checking step, in-camera, of the photo quality of the captured image to determine if the photo quality is acceptable. Luo further fails to disclose that the computed face quality figure of merit to a threshold to determine if the face quality figure of merit exceeds the threshold. Instead, as described above, Luo pertains to a face detection process through use of red-eye detection, and to compensation of the detected red-eye.

Accordingly, even assuming for the sake of argument that one of ordinary skill in the art were somehow motivated to modify the disclosure contained in Ina et al. with the disclosure contained in Luo, the proposed combination would still fail to yield all of the features of Claim 14. Consequently, the proposed combination of Ina et al. and Luo fails to render obvious the claimed invention as set forth in Claim 14, and the Examiner has failed to establish a *prima facie* case of obviousness.

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**B. Rejection of Claims 15-18 and 27 Under 35 U.S.C. §103(a) Over U.S. Patent No. 6,298,198 to Ina et al. in View of U.S. Patent No. 6,134,339 to Luo and Further in View of U.S. Patent Application Publication No. 2002/0191861 to Cheatle**

The Examiner has failed to establish that Claims 15-18 and 27 are *prima facie* obvious over the proposed combination of Ina et al., Luo, and Cheatle for at least the reasons presented in the Appeal Brief dated February 21, 2006.

**C. Rejection of Claim 19 Under 35 U.S.C. §103(a) Over U.S. Patent No. 6,298,198 to Ina et al. in View of U.S. Patent No. 6,134,339 to Luo and Further in View of U.S. Patent No. 6,016,354 to Lin et al.**

The Examiner has failed to establish that Claim 19 is *prima facie* obvious over the proposed combination of Ina et al., Luo, and Lin et al. for at least the reasons presented in the Appeal Brief dated February 21, 2006.

**V. CONCLUSION**

For at least the reasons set forth above, it is respectfully submitted that the rejection of Claims 14-19 and 27 is improper. The Appellant therefore respectfully requests that the

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Board of Patent Appeals and Interferences reverse the Examiner's decision rejecting Claims 14-19 and 27 and to direct the Examiner to pass the case to issue.

Respectfully submitted,

Dated: July 17, 2006

By

  
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